Data and AI on IBM Z
Solution Brief

The Modernization of Data Management

Highlights

- Learn about why data management needs to modernize
- The three components of an IBM modernized data management architecture
- Overview of Db2 DevOps Experience and how it modernizes application development and deployment

The Need for Change

An organization's data is its core business asset. In today's digital and data-driven economy, the needs placed on the management of data is constantly challenged to meet the needs of a growing and changing environment. Technology and data management architecture must respond to address these needs.

Consider the effectiveness of your is your mainframe data management today? Do you have individual, separate products that require time and effort to learn and manage? Ineffective day-to-day data management can impact cost, efficiency, productivity, and profitability. Imagine a modernized data management experience where knowing what you want to do is more important than knowing how to do it? IBM is reshaping the way you manage Db2 for z/OS and IMS to better fit your applications, data growth and user needs both today and in the future.

Architectural Overview

The IBM data management experience provides modern methods of working with and managing the mainframe and its data. There are many unique and significant features that appeal to users of all levels of experience and roles within your organization. It starts with the IBM Unified Management Server for z/OS (UMS), the foundational platform for mainframe data management. The Unified Management Server provides several unique and significant features. You can use these features through the web application interface called IBM Unified Experience for z/OS, which provides modern ways of working with and managing IBM Z.

The three main components that comprise modernized IBM mainframe data management are:

- IBM Unified Management Server for z/OS
- Mainframe data management products (or experiences) that leverage the UMS platform, such as IBM Db2 DevOps Experience for z/OS.
- IBM Unified Experience for z/OS (Zowe-based graphical interface)

The following figures shows the high-level architectural overview with the relationship of the three main components.

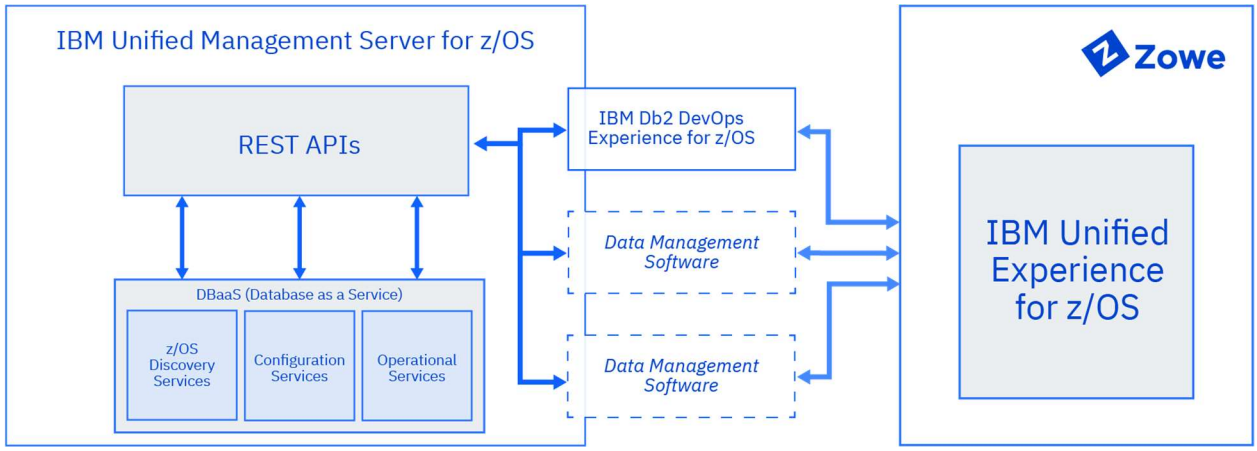

Figure 1: Architectural Overview

The IBM Unified Management Server for z/OS (UMS) is the platform designed for modern mainframe data management. Its extensible capabilities can support IBM Db2 for z/OS and IMS subsystems. Unified Management Server is the architectural server that provides all the common functions needed by the data management experiences that are installed and accessed, such as IBM Db2 DevOps Experience for z/OS.

Figure 1 provides the main features in the Unified Management Server:

- REST APIs – The User Interface calls REST APIs for all interactions. These REST APIs are also available for your use with other software programs or your inhouse-developed applications. For example, you may have applications that participate in Continuous Integration/Continuous Delivery (CI/CD) pipelines that can take advantage of these APIs in automated processes to automate the building, testing and deployment of applications.
- Database as a Service (DBaas) is a way of classifying all the available database services so you can perform various tasks with consistency such as discovery, registration, change requests, performing actions on Db2 and IMS objects, without having to separately install or re-create those services. Some of the services available are shown in Figure1:
  - z/OS Discovery Services - When you install Unified Management Server, it securely "discovers" your mainframe environment, including subsystems, users, and other data, and displays that information through theuser interface (IBMUnifiedExperienceforz/OS)to help you get started.
  - Configurational Services - The UMS configuration registry creates, stores, and manages policies and objects used by installed, supported software. You manage and control various settings for systems, environments, and teams through the Unified Experience (UI).

  - Operational Services represents the actions that can be performed on objects, previously performed in separate, individual products. Now, operational services are more task-oriented and can be shared across domains, no longer isolated within an individual product. For example, the browsing of data in a table requires the discovery of the table and its data and the action of displaying the data.

The benefits of the Unified Management Server include:

- A single point of reference for common functions provides easier problem detection and faster resolution
- The amount and effort of installation and maintenance of code that would otherwise be required by multiple software applications is significantly reduced

Data Management Experiences

Mainframe data management software typically requires a large investment to learn the various settings, configurations, tuning parameters, options, and so on, that is necessary to support your Db2 for z/OS or IMS environment.

Complex individual tooling makes the learning curve steep for new users, while increasing the potential for errors and time to respond. Individual products lack the ability to share technology and data across individual product boundaries. The modernization of mainframe tooling described in this document removes these limitations.

Legacy Db2 and IMS data management products are rearchitected and transformed in the Unified Management Server.
Each software product that is supported by UMS has its own features and interacts with its own relevant z/OS data, but it is unified in the domain area it covers such as DevOps, administration, and performance. This allows for sharing between software and across domains, depending on what software is installed and what role the user has in the organization.

The benefits of data management experiences include:

- Logical components that correspond to different mainframe experiences are controlled and maintained within the respective software
- Allows each data management experience to independently receive frequent updates with new features and enhancements
- The ability to quickly respond with time-to-market requirements and competitive demands that meet your business needs

IBM Unified Experience for z/OS

The IBM Unified Experience for z/OS is a browser-based user interface that is built on top of the open- source Zowe Virtual Desktop. One intuitive interface seamlessly displays all installed software, or data management experiences, by logical groupings. Each data management experience has its own features and interacts with its own relevant z/OS data, but the features and data of all enabled software are integrated into single unified user interface called the Unified Experience. For example, IMS software might allow you to register IMS subsystems and work with IMS objects. But if you also install and enable Db2 for z/OS software, you can register Db2 and IMS subsystems in the same Unified Experience by using many of the similar features. For example, if you are implementing agile development processes for both Db2 and IMS, you'll be able to create and provision hybrid applications containing both Db2 and IMS components using the same Unified Experience.

The installed software, or data management experience, also addresses different mainframe user roles, such as system administrator, database administrator, or application developer. When you install a data management experience, you interact with features and functions through the Unified Experience that fits your individual needs and job role.

The benefits of the Unified Experience include:

- Addresses learning curve for new mainframe users
- Removes individual product barriers, allowing the logical flow and sharing of information in one common display

IBM Db2 DevOps Experience for z/OS

Db2 DevOps Experience is the first IBM data management product to take advantage of the Unified Management Server architecture. Db2 DevOps Experience allows organizations to bring applications to market more rapidly, at lower cost and with less risk. The Db2 DevOps Experience can help connect people, processes, and automation in an integrated and collaborative way.

For example, IBM Db2 DevOps Experience for z/OS allows a developer to self-provision test environments without waiting for IT assistance to speed the release of Db2 applications. A database administrator who uses Db2 DevOps Experience can ensure that company standards and business rules are defined as part of application development and deployment. Db2 DevOps Experience also manages versioned Db2 DDL as code (Database as code) within a source code management system

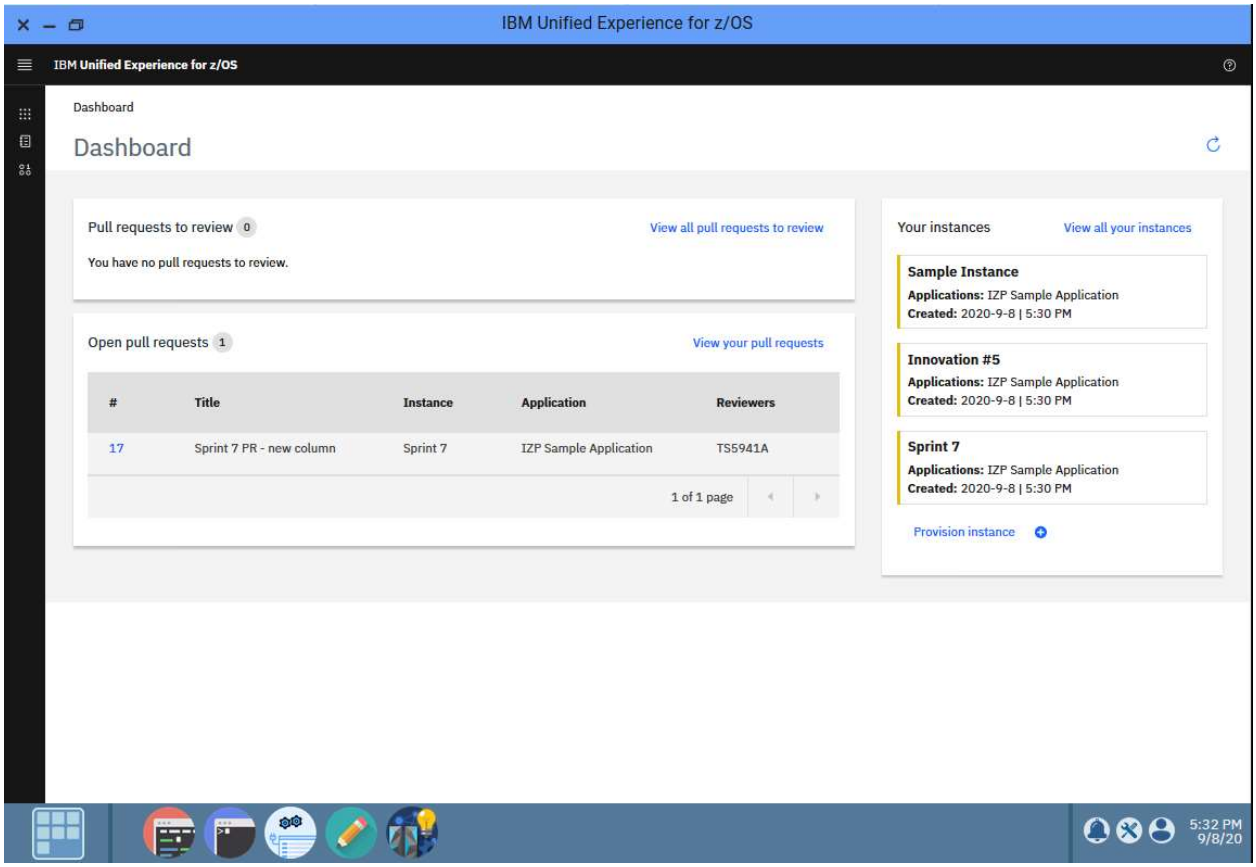

Figure 2: A sample dashboard view that an application team may see within the Unified Experience

A team member can review the changes requested and their potential impact before merging the changes to the originating application. Approval of any change is approved by the team administrator before they get approved and merged into the originating application.

Summary

The modernization of data management architecture unlocks the value of your Db2 for z/OS and IMS data. This modern technology protects your current investment in Db2 and IMS data management products, while seamlessly integrating processes, people and tasks to identify opportunities and insights. By streamlining traditional data management processes, businesses can make faster and better decisions.

For more information

To learn more about IBM Db2 tools, contact your IBM representative, or visit: **ibm.com/**analytics/db2/tools-zos

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